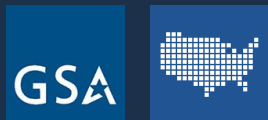


DAP Learning Series:

Tag Managers Part 2

Configuration Framework

Freddie Blicher, DAP Analyst



Agenda

1. Brief recap of Tag Manager Systems (TMS)
2. Datalayer Variables, Triggers and Tags
3. 3 path configuration framework and best practices on when to configure them.
4. Examples
5. Q & A



This hour is designed to be conceptual rather than technical.

Different tools will have different ways of implementing the processes I talk about today. Also, I am not a developer. If I have something incorrect, please tell me.

How to get value out of today's webinar

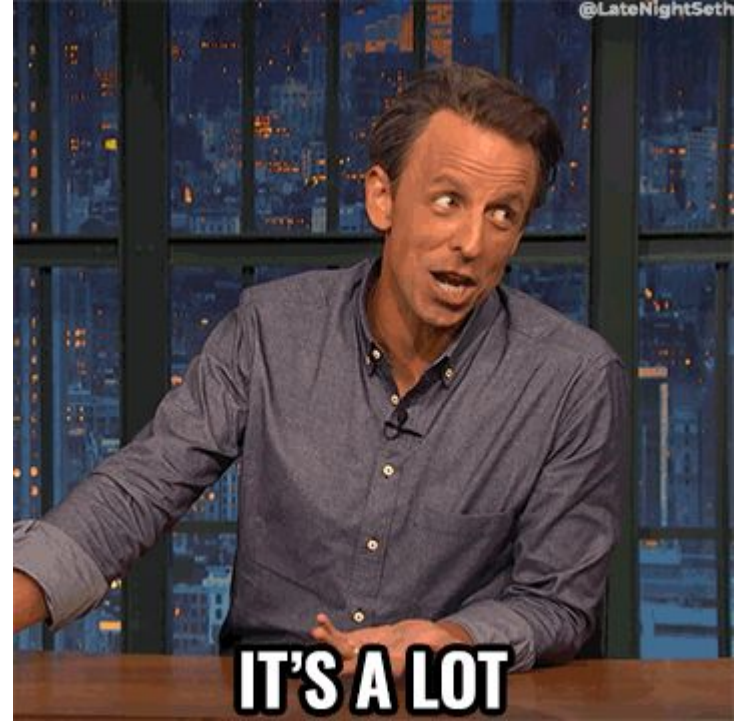
- Advanced topic
- Intermediate level in Google Analytics
- Some experience with TMS Data layer variables, triggers and tags
- Know your Goals & KPIs

This is a lot

If you're new to GA and TMS, you'll get more value out of learning the basics first with these webinars:

[DAP 101](#)

[DAP 201](#)



Why are we here today?

Using a TMS can feel like figuring out what came first - the chicken or the egg?

Figuring out “when” and “how” to implement a TMS is challenging, but half the battle.

Our goal is to help demystify this more for you!

What makes this challenging

How you implement a TMS is entirely specific to your website technology/CMS

- Different developers
- Different CMS platform (Wordpress, Drupal, etc.)
- Which means different code, elements, data layers, etc.

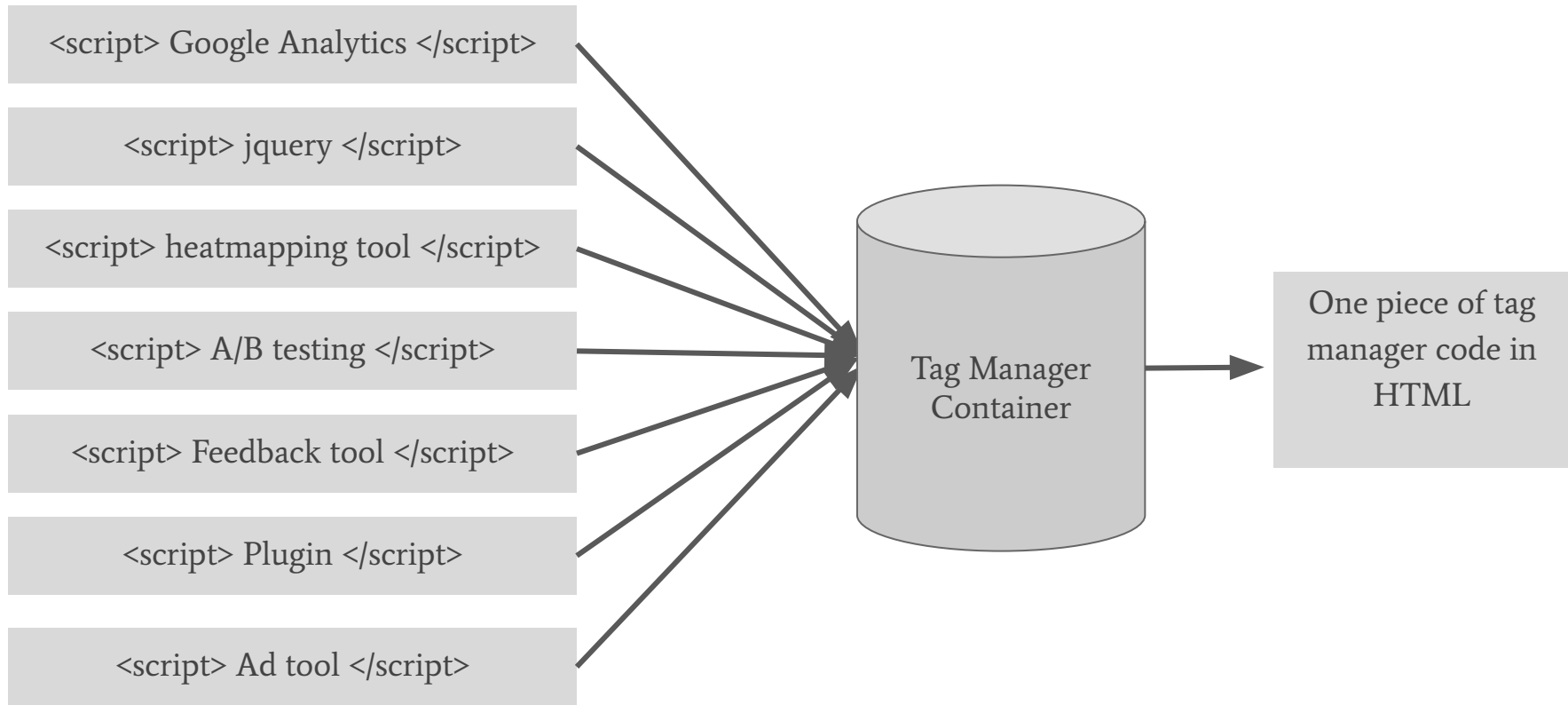
Let's do a quick recap of Tag Managers

Tag Manager Systems (TMS) allow you to deploy scripts, trigger actions, and store data for use in a central place without touching page source-code



Why use Tag Managers?

- Track interactions at scale
 - Example - PDF downloads
 - PDF download conversion rate
- Get really customized with what you want to track
- Lessen the burden on your development team



This is what a tag manager does...

What's required?

Knowing your:

- Website mission
- Goals
- KPIs

See our previous webinar

Tag Managers Part 1



If you want to know more about the data layer...

See [DAP's Part 1](#) of this webinar series

Let's unpack some terminology



Data layer

- Invisible layer into which your developer or CMS plugins, or Google Tag Manager can push, or reference information about different interactions, or to trigger some piece of data to be collected and sent to Google Analytics.
- Previous webinar: "The Data Layer is an invisible place you can send and temporarily store data that your tag manager* can use. The tag manager can send it to application(s) or use it to trigger other things"
--[Tim Lowden](#)
- Not every website has a data layer
- Developers sometimes aren't familiar with it

Tag

- Tracking code you implement on your site
 - Google Analytics Event Tag
 - Facebook pixel tag
 - Google Ads Conversion Tag
- The “What” → What do you want TMS to do?

Trigger

- Rules you define for when your tags fire
 - For example:
 - Fire an event tag when a user clicks a button
 - Fire an event tag when a user scrolls down 75% of the page
- The "When" → When do you want to track some interaction using a tag?
- Triggers aren't just used for sending data to Google Analytics!

Variables

- Information you can use in Tags or Triggers
- The "What" or "When" or the "How"
- Multipurpose - make a trigger more specific

How should we think about configuring a TMS?



How do we even start?

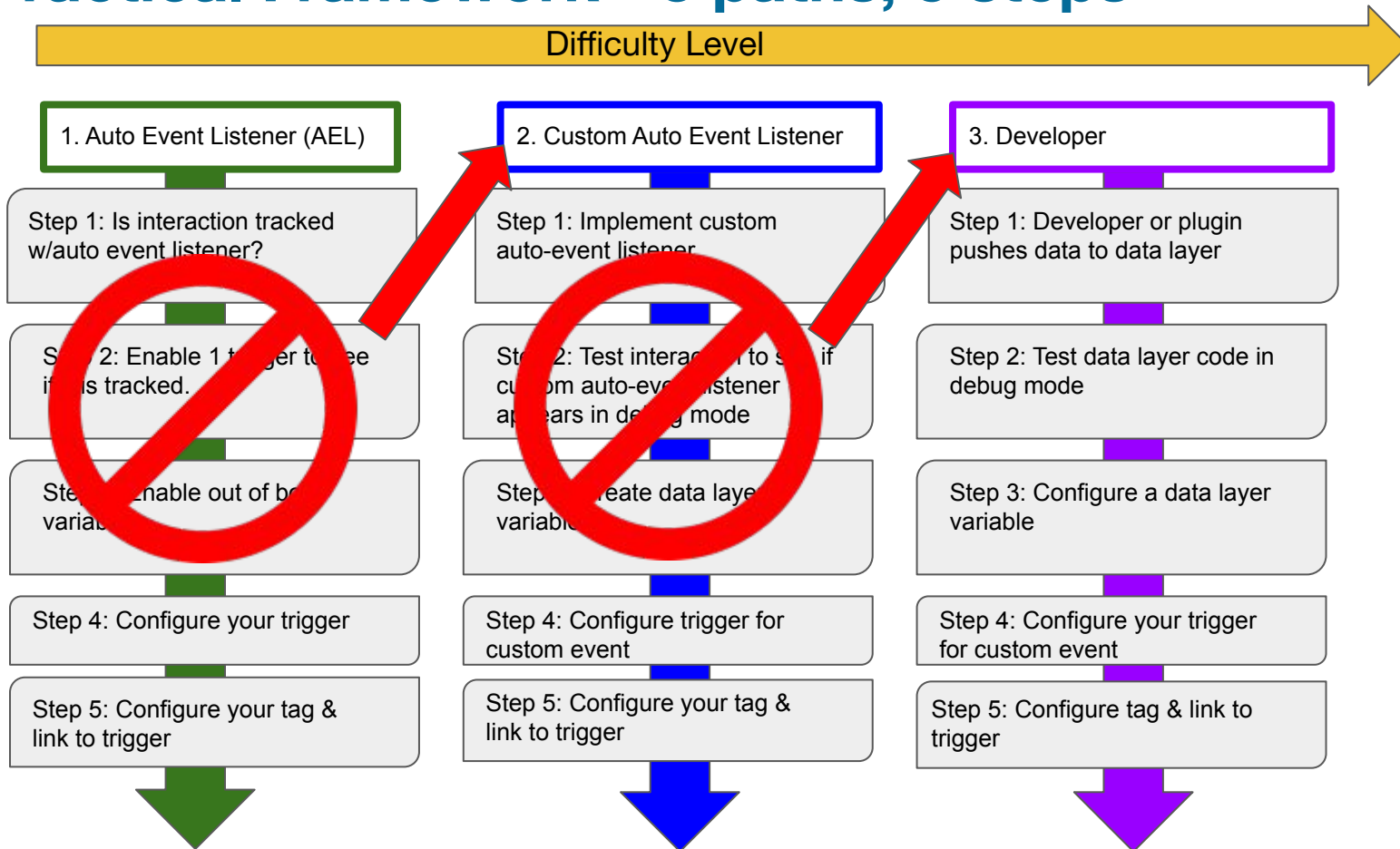
- What's the thought process of deciding how to get data into the data layer into Google Tag Manager and into GA?
- What is our mental model?

Mental Model

The Goal:

- Get the data in the data layer.
- Using either a **standard auto-event listener, custom auto event listener, developer/CMS plugin**
- Once you have the data available in the data layer, then you can configure TMS
- Then you read data with variables, define your trigger and then create a tag
- Examples: Link clicks, PDF downloads, Video plays, Login status, scroll depth, custom interactions.

Practical Framework - 3 paths, 5 steps



Path 1 - Auto Event Listener



What is an auto event listener?

- Functions (or set of functions) out of the box that are created to track certain interactions.
- When they spot that particular interaction, you can see it (and its data) in the debug mode of Google Tag Manager
- ***Enable triggers, to enable auto event listeners***
- What can you track? Automatically track events - PDFs, Outbound link clicks, etc.

Let's look at our triggers in a TMS




CURRENT WORKSPACE

Default Workspace >

- Overview
- Tags
- Triggers**
- Variables
- Folders
- Templates

✕ Choose trigger type





Page View

-  Page View
-  DOM Ready
-  Window Loaded






Click

-  All Elements
-  Just Links

User Engagement

-  Element Visibility
-  Form Submission
-  Scroll Depth
-  YouTube Video

Other

-  Custom Event
-  History Change
-  JavaScript Error
-  Timer
-  Trigger Group

Today's examples

Using GTM

The screenshot displays the Google Tag Manager (GTM) interface. At the top, there are tabs for 'Workspace', 'Versions', and 'Admin'. The 'Workspace' tab is active, showing the workspace ID 'GTM-KS766QX' and buttons for 'Preview' and 'Submit'.

On the left side, there is a sidebar with a 'CURRENT WORKSPACE' section showing 'Default Workspace' with a right arrow. Below this is a list of navigation items: 'Overview' (highlighted with a blue bar), 'Tags', 'Triggers', 'Variables', 'Folders', and 'Templates'.

The main content area is divided into several sections:

- Now Editing** (blue header): 'Default Workspace' with a three-dot menu icon.
- Workspace Changes** (white header): A summary of changes with three large numbers: '0' for Modified, '7' for Added, and '0' for Deleted. Below each number is its respective label. A 'Manage workspaces' link with a right arrow is at the bottom.
- Live Version** (green header): 'Version 4'. Below it, it says 'Published 2 days ago by freddie.blicher@gmail.com'.
- Latest Version** (white header): 'Version 4', 'Modified 2 days ago by freddie.blicher@gmail.com'. A 'Latest version' link with a right arrow is at the bottom.
- New Tag** (blue header): 'Choose from over 50 tag types' with an icon of a tag and a red arrow pointing to it.
- Description** (blue header): A section for the workspace description.

Let's look at an example - Auto event listener

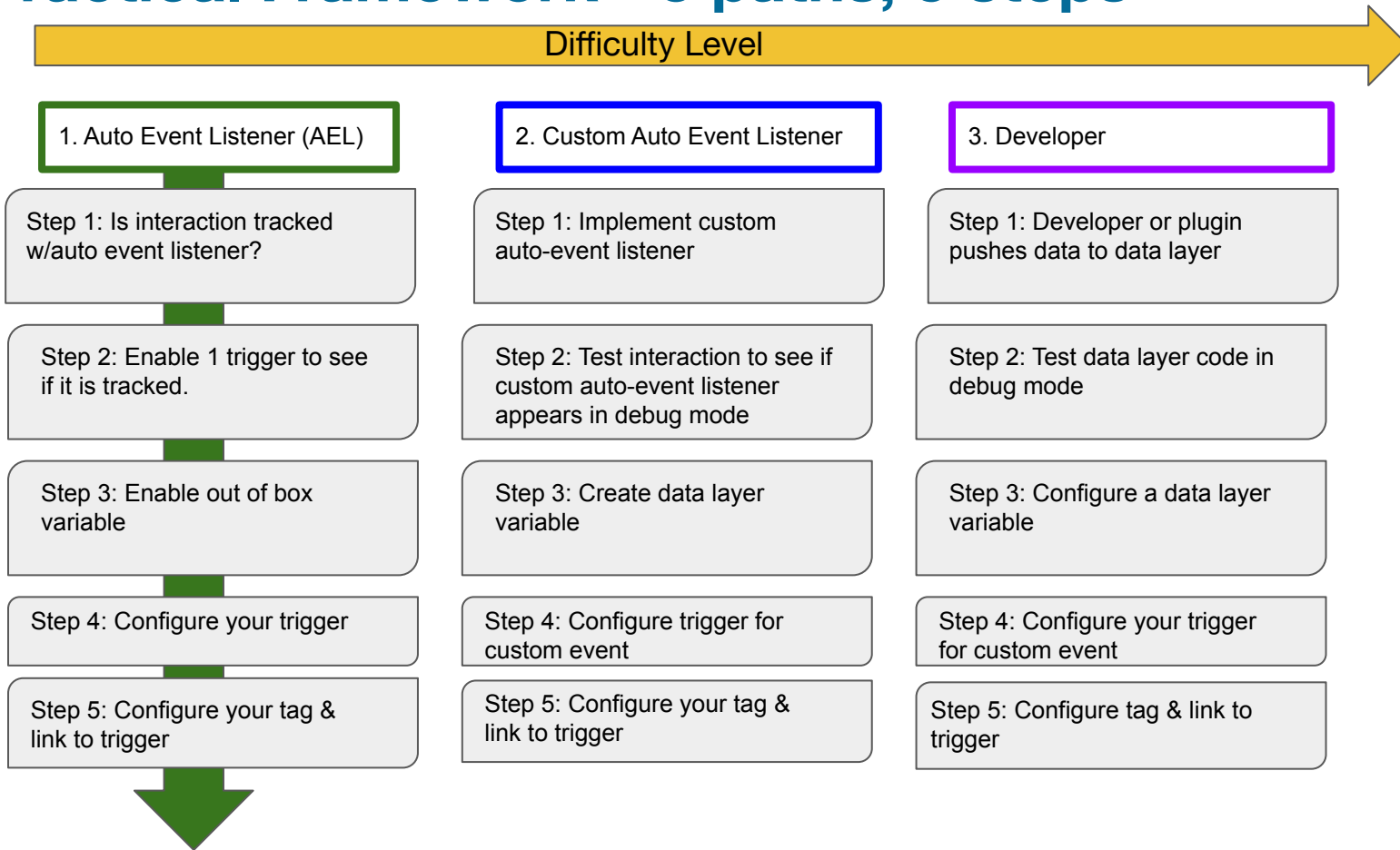
Let's say we want to track the number of PDF downloads of the document on

<https://www.fedramp.gov/2021-03-16-Vulnerability-Scanning-doc/>



The Federal Risk and Authorization Management Program (FedRAMP) is pleased to announce the release of the Vulnerability Scanning Requirements for Containers document. This document addresses FedRAMP compliance pertaining to the processes, architecture, and security considerations specific to vulnerability scanning for cloud systems using container technology. Prior to this release, the document was reviewed by Cloud Service Providers (CSPs) in a Technical Exchange Meeting and was provided to our stakeholders for public comment to ensure the guidance met CSPs' needs.

Practical Framework - 3 paths, 5 steps



Path 1, Step 1

Step 1: Is interaction tracked w/auto event listener in GTM debug mode?

We click the PDF link and don't see link clicks enabled.

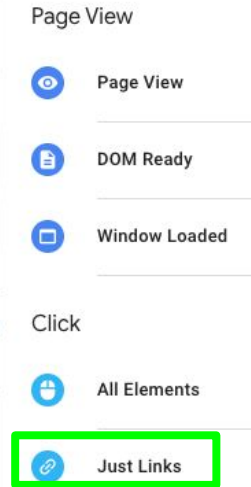
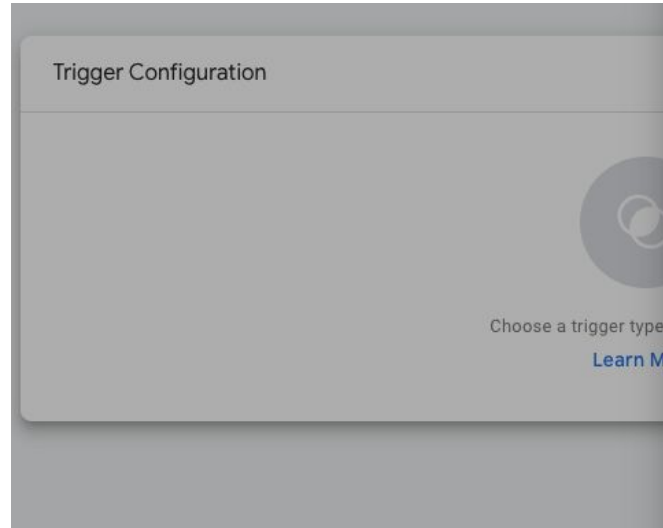
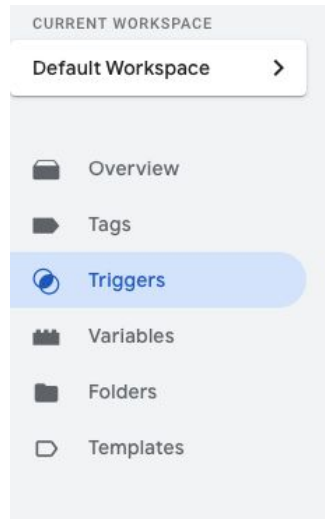
No, it does not fire in the data layer

The screenshot displays the GTM debug console. On the left, a list of events shows 'Container Loaded' highlighted with a green box. The main panel shows the 'Output of GTM-KS766QX' with a table of variables. The table has columns for Variable, Variable Type, Return Type, and Value. The first row shows '_event' as a Custom Event with a string return type and an undefined value. The second row shows 'GA Settings' as Google Analytics Settings with an object return type and a detailed configuration object value.

Variable	Variable Type	Return Type	Value
_event	Custom Event	string	'undefined'
GA Settings	Google Analytics Settings	object	{ doubleClick: false, setTrackerName: false, useDebugVersion: false, useHashAutoLink: false, decorateFormsAutoLink: false, enableLinkId: false, enableEcommerce: false, trackingId: 'UA-20981337-2', fieldsToSet: [{fieldName: 'cookieDomain', value: 'auto'}] }

Path 1, Step 2

Determine which out of the box auto event listener you need to enable to see the link click for the pdf in the data layer.



Path 1, Step 2 cont.

Preview in GTM debug mode to see if link click appears in data layer



The Federal Risk and Authorization Management Program (FedRAMP) is pleased to announce the release of the [Vulnerability Scanning Requirements for Containers](#) document. This document addresses FedRAMP compliance pertaining to the processes, architecture, and security considerations specific to vulnerability scanning for cloud systems using container technology. Prior to this release, the document was reviewed by Cloud Service Providers (CSPs) in a Technical Exchange Meeting and was provided to our stakeholders for [public comment](#) to ensure the guidance met CSPs' needs.

Summary

▶ Vulnerability_Scannin... 3

▼ Vulnerability Scanning ...

5 Link Click

4 Window Loaded

3 DOM Ready

2 Container Loaded

1 Container Loaded

Link Click

API Call

```
dataLayer.push({event: 'gtm.linkClick', ...})
```

Output of GTM-KS766QX

Tags

Variables

Data Layer

Data Layer values after this Message:

```
1 {
2   gtm: {
3     start: 1616456654413,
4     uniqueEventId: 8,
5     element: 'https://www.fedramp.gov/assets/resources/documents/Vulnerability_Scanning_Requirements_for_Containers.pdf: html.fontawesome-i2svg-active.fontawesome-i2svg-complete.focus-within > body.page-blog.focus-within > main.focus-within#main > section.fedramp-page-container.focus-within > div.grid-container.focus-within > div.grid-row.focus-within > div.desktop:grid-col-9.desktop:padding-right-8.focus-within > p.focus-within > a.focus-within',
6     elementClasses: 'focus-within',
7     elementId: '',
8   },
9 }
```

Path 1, Step 3

Enable out of box variables

Workspace

Versions

Admin

CURRENT WORKSPACE

Default Workspace >

Overview

Tags

Triggers

Variables

Folders

Built-In Variables ?

Name ↑	Type
Click Classes	Data Layer Variable
Click Element	Data Layer Variable
Click ID	Data Layer Variable
Click Target	Data Layer Variable
Click Text	Auto-Event Variable



Debug Mode

Clicks



Click Element



Click Classes



Click ID



Click Target



Click URL



Click Text

Path 1, Step 3 cont.

Check variables in GTM debug mode data layer

5 Link Click

4 Window Loaded

3 DOM Ready

2 Container Loaded

1 Container Loaded

Output of GTM-KS766QX

Tags

Variables

Data Layer



Variable	Variable Type	Return Type	Value
_event	Custom Event	string	'gtm.linkClick'
Click Classes	Data Layer Variable	string	'focus-within'
Click Element	Data Layer Variable	string	'https://www.fedramp.gov/assets/resources/documents/Vulnerability_Scanning_Requirements_for_Containers.pdf: html.fontawesome-i2svg-active.fontawesome-i2svg-complete.focus-within > body.page-blog.focus-within > main.focus-within#main > section.fedramp-page-container.focus-within > div.grid-container.focus-within > div.grid-row.focus-within > div.desktop.grid-col-9.desktop:padding-right-8.focus-within > p.focus-within > a.focus-within'
Click ID	Data Layer Variable	string	*
Click Target	Data Layer Variable	string	'_blank'
Click Text	Auto-Event Variable	string	'Vulnerability Scanning Requirements for Containers'
Click URL	Data Layer Variable	string	'https://www.fedramp.gov/assets/resources/documents/Vulnerability_Scanning_Requirements_for_Containers.pdf'


Path 1, Step 4


Update your trigger

Trigger Configuration

Trigger Type

 Click - Just Links 


☐ Wait for Tags 


☐ Check Validation 



This trigger fires on

☐ All Link Clicks ☒ Some Link Clicks

Fire this trigger when an Event occurs and all of these conditions are true

Click URL 

matches RegEx (ignore case) 


`\\.pdf|\\.docx|\\.xls|\\.xlsm|\\.xlsx|\\.pptx|\\.`  

Path 1, Step 5

Create a tag

Tag Configuration

Tag Type

 **Google Analytics: Universal Analytics**
Google Marketing Platform

Track Type
Event

Category
downloads

Action
{{Click URL}}

Label
{{Page URL}}

Google Analytics Settings ?

{{GA Settings (New)}} ⓘ

Path 1, Step 5 cont.

Confirm tag fires in GTM debug mode

The screenshot displays the Google Tag Manager (GTM) debug console interface. On the left, a sidebar lists the execution path: 'Vulnerability Scanning R...', '4 Link Click' (highlighted), '3 Window Loaded', '2 DOM Ready', and '1 Container Loaded'. The main panel shows the 'API Call' section with the code `dataLayer.push({event: 'gtm.linkClick', ...})`. Below this, the 'Output of GTM-TT3D6BG' section has tabs for 'Tags', 'Variables', and 'Data Layer'. The 'Tags' tab is active, showing a 'Tags Fired' list. A green rectangular box highlights the first entry in this list, which contains two lines: 'GA Event - document link click' and 'Google Analytics: Universal Analytics - Succeeded'.

□ Vulnerability Scanning R...

4 Link Click

3 Window Loaded

2 DOM Ready

1 Container Loaded

API Call

```
dataLayer.push({event: 'gtm.linkClick', ...})
```

Output of GTM-TT3D6BG

Tags Variables Data Layer

Tags Fired

GA Event - document link click

Google Analytics: Universal Analytics - Succeeded

Path 2 - Custom Auto Event Listener

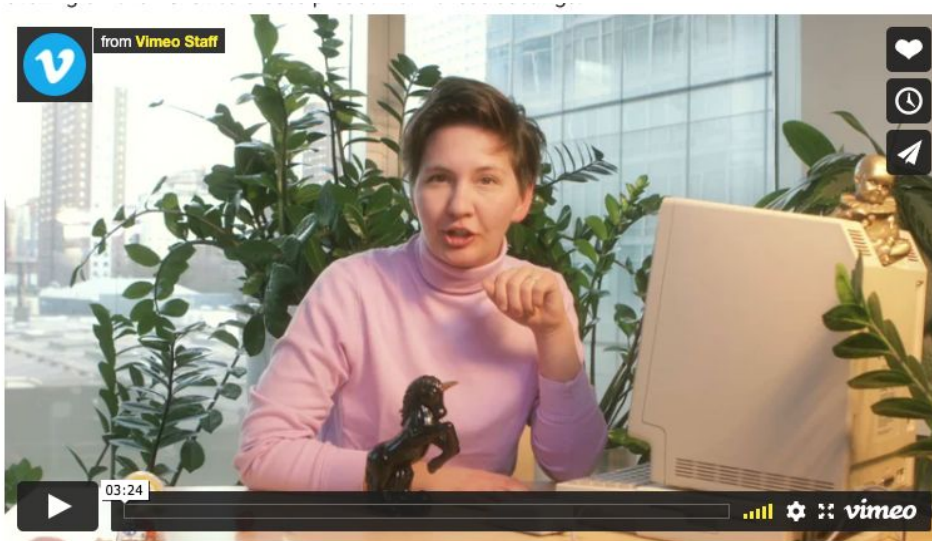


What is a custom auto event listener?

- Similar concept as auto event listener, but must be custom configured
- ***Enable custom event listeners using Custom HTML tags***
- ***Custom listener adds data about the interaction into the data layer. You access it with Data Layer Variables.***
- Example: Click play button on a Vimeo embedded video

Let's look at an example - Custom auto event listener

Let's say we want to track an embedded Vimeo video. This is similar to you a YouTube video, but it's from a different company.



Learning Vimeo – Basic Embed Customization for Sharing Videos from Vimeo Staff on Vimeo.

Let's look at our auto event listeners in our TMS

CURRENT WORKSPACE

Default Workspace >

- Overview
- Tags
- Triggers**
- Variables
- Folders
- Templates

Choose trigger type

Page View

- Page View
- DOM Ready
- Window Loaded

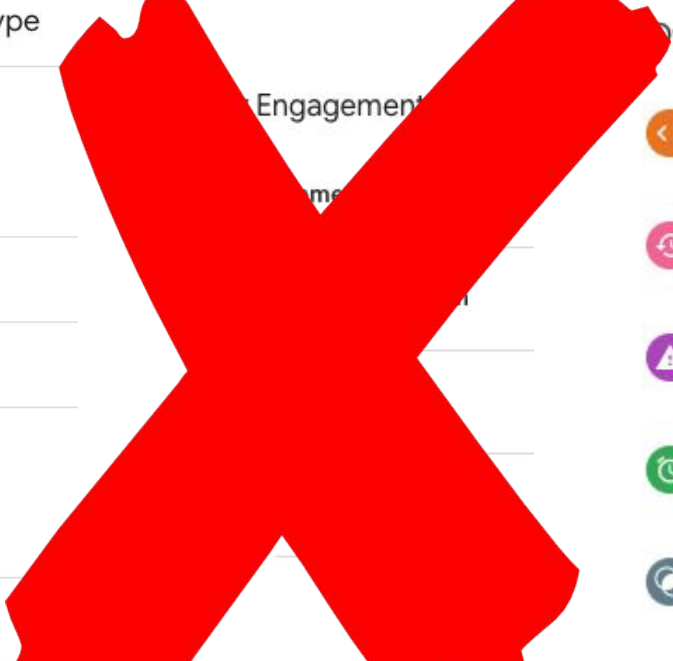
Click

- All Elements
- Just Links

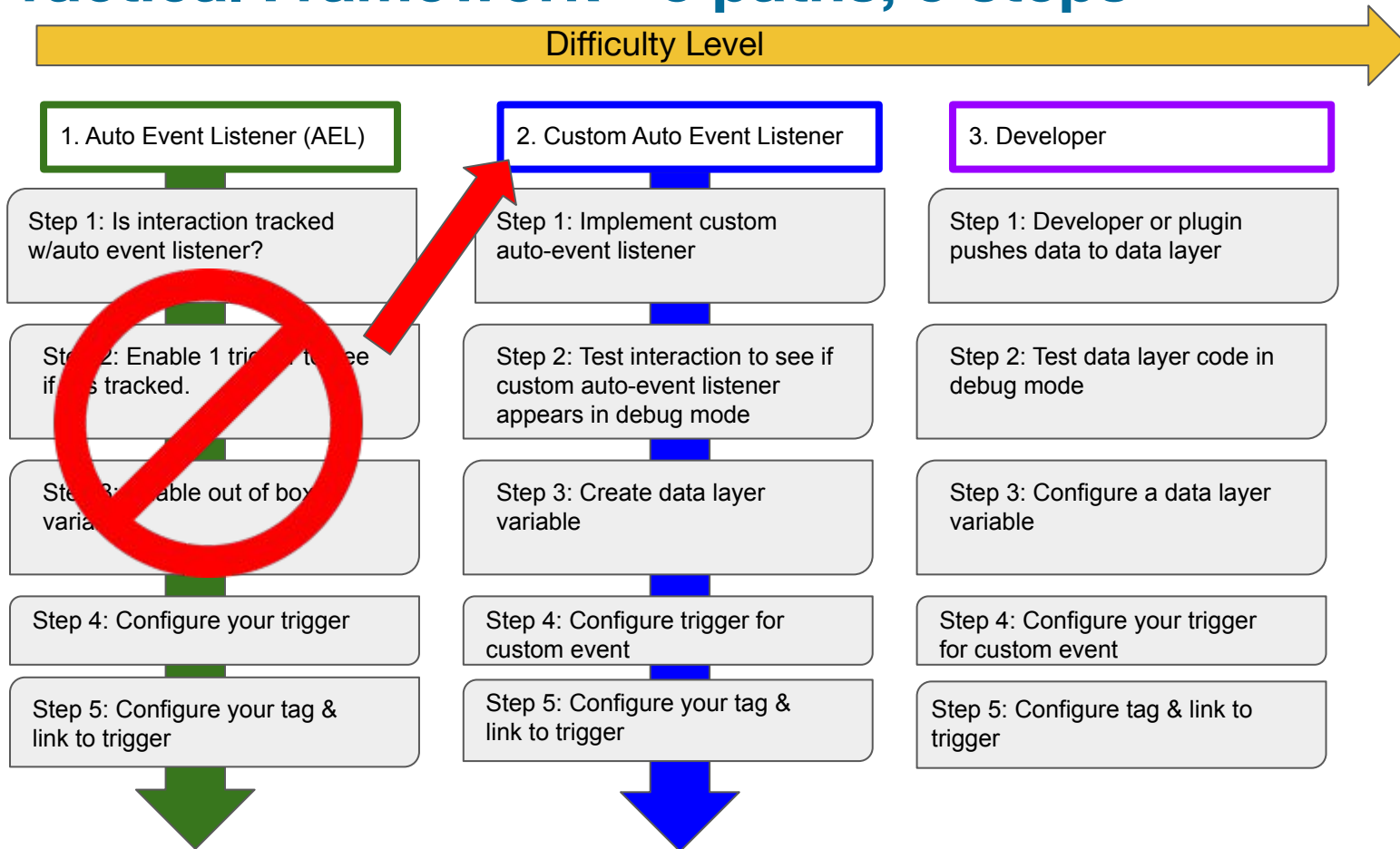
Engagement

Other

- Custom Event
- History Change
- JavaScript Error
- Timer
- Trigger Group



Practical Framework - 3 paths, 5 steps



Path 2, Step 1

Implement custom auto-event listener

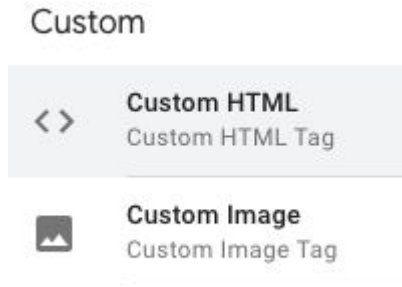
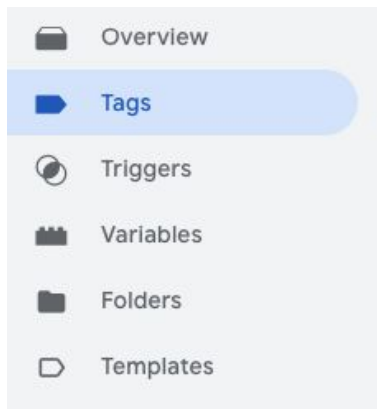


🔍 vimeo gtm tracking



Path 2, Step 1

Implement custom auto-event listener using custom html tag



Path 2, Step 2

Add a trigger to the custom html tag

Tag Configuration

Tag Type

<> Custom HTML
Custom HTML Tag

HTML ⓘ

```
1 <!--
2 Google Analytics Tag Manager (V2) custom HTML tag for Vimeo video tracking
3
4 Copyright 2016, Cardinal Path, Inc.
5
6 Original author: Bill Tripple <btripple@cardinalpath.com>
7 Revised by: Bogdan Bistriceanu <bbistriceanu@cardinalpath.com>
8 Updated by: Julius Fedorovicus <julius@analyticsmania.com> and Richard Outram
9 <Richard.Outram@simmbiotic.com>
10
11 Version 2.1
12 ==>
13 <script>
14 var dataLayer = (typeof(dataLayer) !== "undefined" && dataLayer instanceof Array) ? dataLayer : [];
15 var videoLabels=[];
16 var lastP=[];
17
18 //we declare variables that will hold information about the video being played
```


Triggering

Firing Triggers

dom ready
DOM Ready

Trigger Configuration

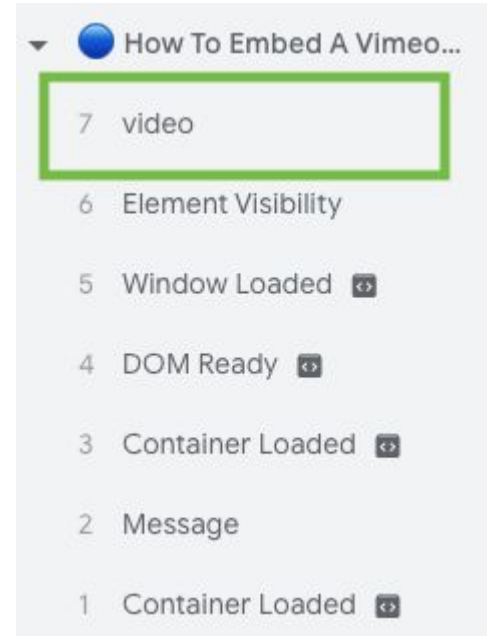
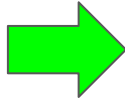
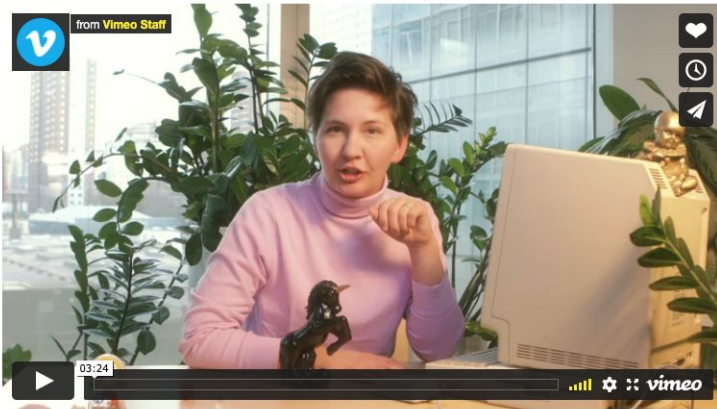
Trigger Type

 Page View - DOM Ready

This trigger fires on
All DOM Ready Events

Path 2, Step 2

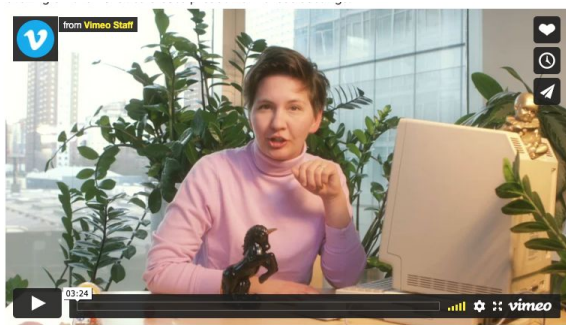
Now let's test the custom auto event listener by using TMS's preview and debug mode



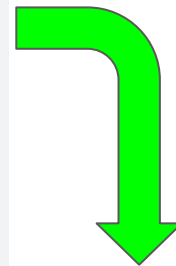
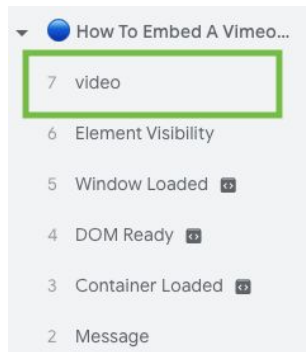
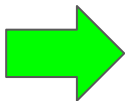
Learning Vimeo – Basic Embed Customization for Sharing Videos from Vimeo Staff on Vimeo.

Path 2, Step 2

We see data layer info on vimeo in the data layer.



Learning Vimeo - Basic Embed Customization for Sharing Videos from Vimeo Staff on Vimeo.



```
eventCategory: 'vimeo',  
eventAction: 'vimeo play',  
eventLabel: 'learning vimeo - basic embed customization for sharing vi  
deos - 92060045',  
vimeo_playerID: '92060045',  
vimeo_playerTitle: 'learning vimeo - basic embed customization for sha  
ring videos',  
vimeo_playerAuthor: 'vimeo staff',  
vimeo_playerAuthorURL: 'https://vimeo.com/staff',  
vimeo_playerUploadDate: '2014-04-15 13:36:20',  
nonInteractive: true
```

Path 2, Step 3


Now we have to create data layer variables for eventAction & eventLabel variables in the data layer.


dlv - eventAction 

Added in this workspace

Variable Configuration

Variable Type

 **Data Layer Variable**

Data Layer Variable Name 
eventAction


Data Layer Version
Version 2


✕ dlv - eventLabel 

Added in this workspace

Variable Configuration

Variable Type

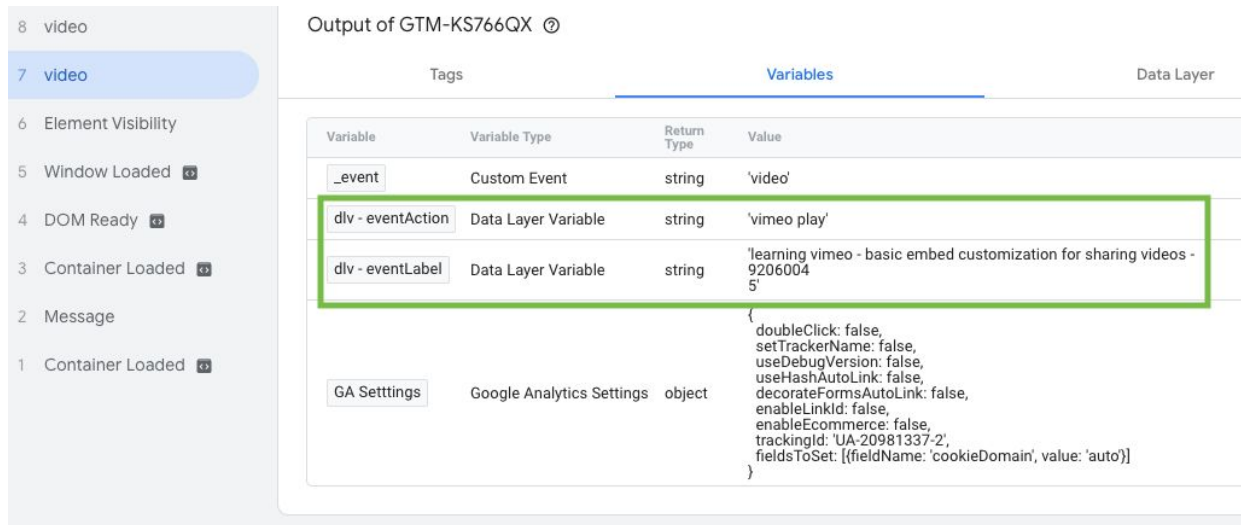
 **Data Layer Variable**

Data Layer Variable Name 
eventLabel

Data Layer Version
Version 2

Path 2, Step 3

Next, refresh GTM debug mode to check to see that variables are working. Both variables contain values.



The screenshot displays the GTM debug console interface. On the left, a vertical list of events is shown, with 'video' selected at the top. The main area, titled 'Output of GTM-KS766QX', contains three tabs: 'Tags', 'Variables', and 'Data Layer'. The 'Variables' tab is active, showing a table of variable outputs. A green rectangular box highlights the first three rows of the table, which represent the variables being checked. The first row shows the '_event' variable with the value 'video'. The second row shows the 'dlv - eventAction' variable with the value 'vimeo play'. The third row shows the 'dlv - eventLabel' variable with a long string value. The fourth row, 'GA Settings', is not highlighted.

Variable	Variable Type	Return Type	Value
_event	Custom Event	string	'video'
dlv - eventAction	Data Layer Variable	string	'vimeo play'
dlv - eventLabel	Data Layer Variable	string	'learning vimeo - basic embed customization for sharing videos - 92060045'
GA Settings	Google Analytics Settings	object	{ doubleClick: false, setTrackerName: false, useDebugVersion: false, useHashAutoLink: false, decorateFormsAutoLink: false, enableLinkId: false, enableEcommerce: false, trackingId: 'UA-20981337-2', fieldsToSet: [{fieldName: 'cookieDomain', value: 'auto'}] }

Path 2, Step 4

Configure trigger for custom event for whenever a vimeo data layer push occurs on the page. Use the 'video' event in the data layer.

7 video

6 Element Visibility

5 Window Loaded

4 DOM Ready

3 Container Loaded

2 Message

1 Container Loaded

TagsVariablesData Layer

Data Layer values after this Message:

```
1 {
2   gtm: {
3     start: 1616507437933,
4     uniqueEventId: 7,
5     element: 'HTMLElement: html.js > body.post-template-default.single.s
6       ingle-post.postid-7714.single-format-standard.et_pb_button_
7       helper_class.et_fixed_nav.et_show_nav.et_cover_background.e
8       t_secondary_nav_enabled.et_secondary_nav_two_panels.et_pb_g
9       utter.osx.et_pb_gutters3.et_primary_nav_dropdown_animation_
10      fade.et_secondary_nav_dropdown_animation_fade.et_pb_footer_
11      columns_1_2_1_4.et_header_style_left.et_right_sidebar.et_d
12      ivi_theme.et-db.chrome > div.et-animated-content#page-conta
13      iner > div#et-main-area > footer#main-footer',
14     elementClasses: '',
15     elementId: 'main-footer',
16     elementTarget: '',
17     triggers: '11209205_40',
18     elementUrl: '',
19     visibleRatio: 54.8,
20     visibleTime: 0,
21     visibleFirstTime: 13693,
22     visibleLastTime: 13693
23   },
24   event: 'video',
25   pagePostType: 'post',
26   pagePostType2: 'single-post',
27   pageCategory: ['video-sharing-sites', 'vimeo'],
```

custom event - video

Added in this workspace

Trigger Configuration

Trigger Type



Custom Event

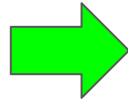
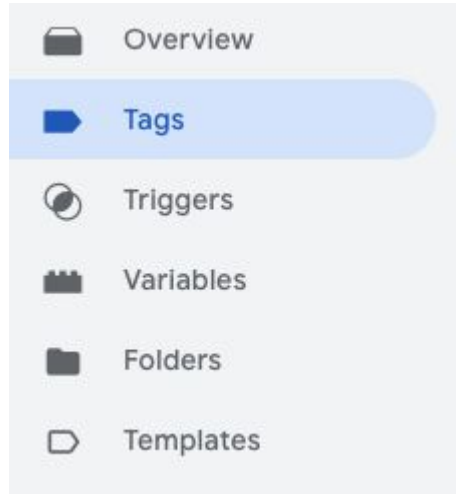
Event name

video

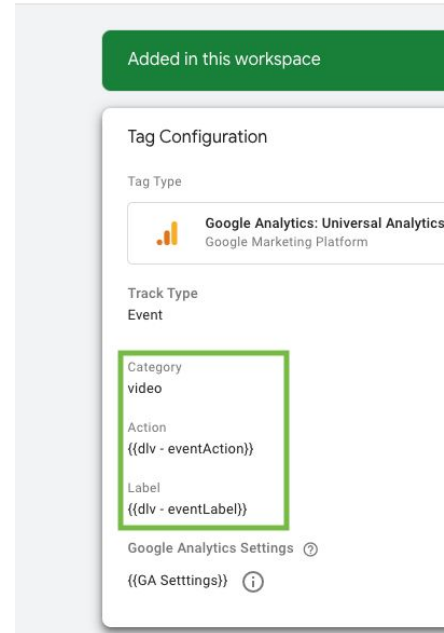
This trigger fires on
All Custom Events

Path 2, Step 5

Configure your tag & link to trigger

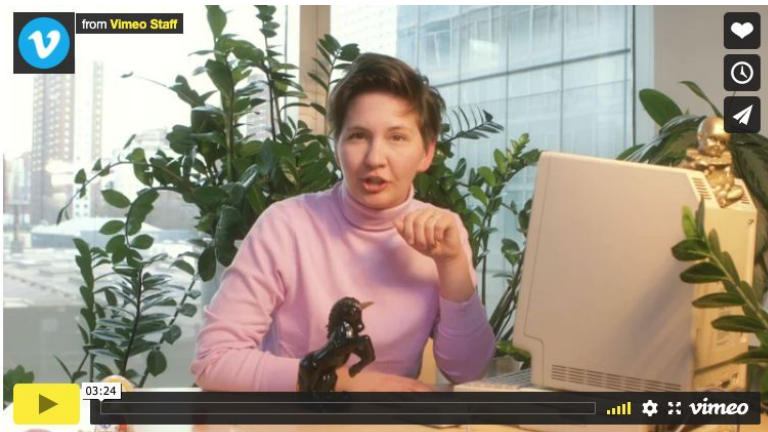


GA event - vimeo



Path 2, Step 5

Next we test the tag in debug mode in TMS



7 video

- 6 Element Visibility
- 5 Window Loaded
- 4 DOM Ready
- 3 Container Loaded
- 2 Message
- 1 Container Loaded

Output of GTM-KS766QX

Tags Variables

Tags Fired

GA event - vimeo

Google Analytics: Universal Analytics - Succeeded

Tags Not Fired

GA Pageview

Google Analytics: Universal Analytics

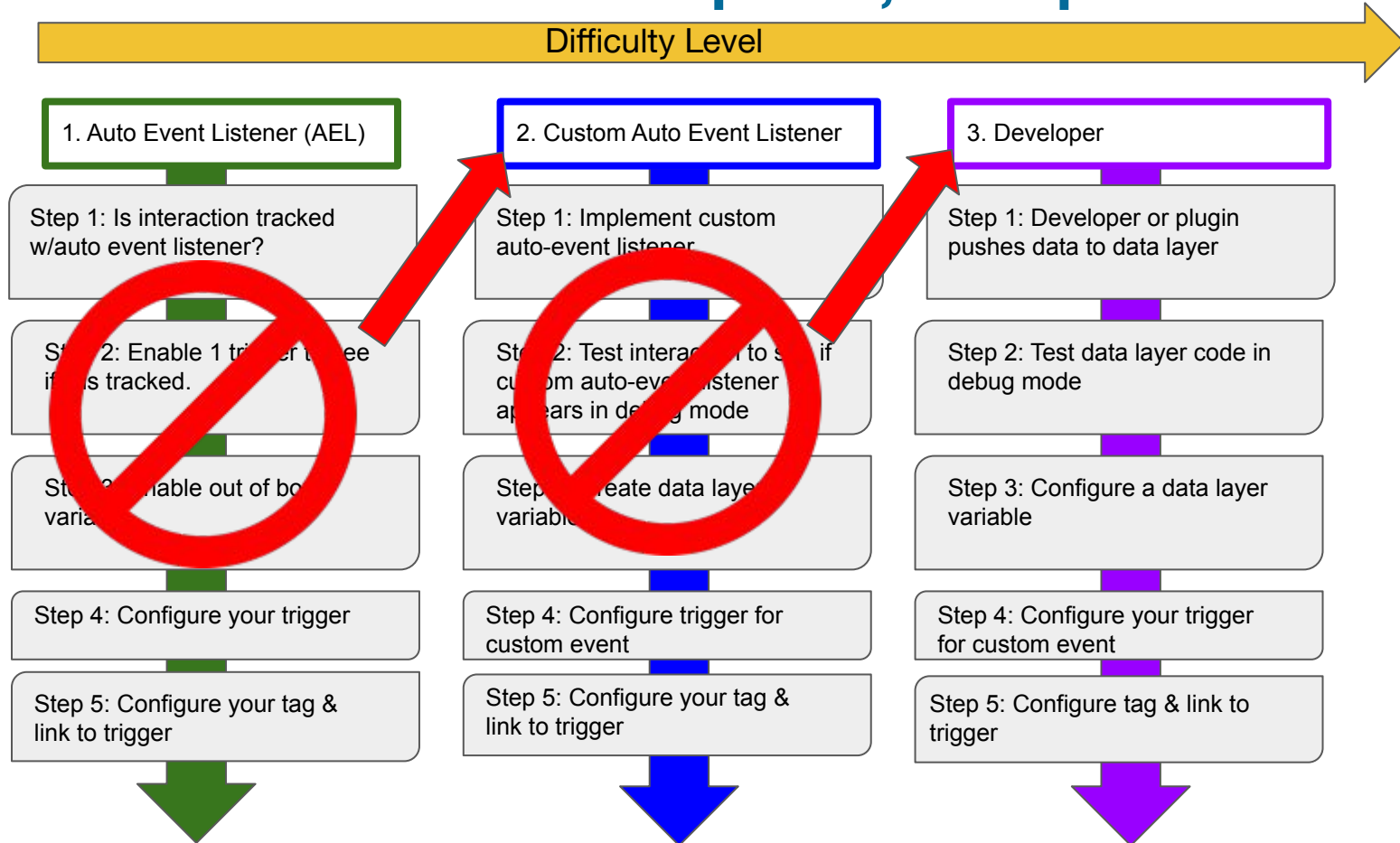
html - vimeo listener

Custom HTML

Path 3 - Datalayer



Practical Framework - 3 paths, 5 steps



Send data to the data layer

<script>

window.dataLayer = window.dataLayer || [];

window.dataLayer.push({

"loginStatus":"Not Logged In",

"customerTransactions":0,

"accountStartDate":"2021-03-18 11:51:18.78"

});

</script>




Custom data about an interaction gets inserted here by your developer or plugin

Let's look at an example - usps.com

```
<script type="text/javascript">var dataLayer = window.dataLayer =  
window.dataLayer || [];dataLayer.push({  
  "loginStatus":"Not Logged In",  
  "accountType":"Guest",  
  "customerID":"2204872731",  
  "customerTransactions":0,  
  "accountStartDate":"2021-03-24 10:41:31.277",  
  "pageSubsection":"shoppingcart",  
  "pageName":"store.shoppingcart.review",  
  "event":"ecomListImpression",  
  "pageSection":"store",  
  "pageSubSubsection":"review",  
  "ecommerce":{"cart":{"products":[{"product":"U.S. Flag",  
    "dimension102":"Book of 20",  
    "name":"U.S. Flag - Book of 20",  
    "category":"Philatelic",  
    "Price":"11.0","quantity":1,  
    "Id":"682304",  
    "dimension101":"In Stock",  
    "Quantity":1}],  
    "Impressions":[]  
  }};  
</script>
```

[Quick Tools](#)[Send](#)[Receive](#)[Shop](#)

Shopping Cart

Item	Price	Qty	Total
 U.S. Flag SKU: 682304 Book of 20 In Stock Forever 55¢ Multiple Formats Availability: Ships in 5 - 7 business days Remove	\$11.00	<input type="text" value="1"/> Update	\$11.00

[Clear Shopping Cart](#)

For more info on this approach

Refer to [DAP's Part 1 webinar](#)

Takeaways

- **Figuring out how to configure a TMS is challenging**
- **Use 3 path configuration framework**
- **Path 1 is the easiest and path of least resistance for most people**
- **Paths 2 & 3 require significantly more thought and development work**
- **Choose your path wisely**

Questions?

**As always, reach out to us with questions at
dap@support.digitalgov.gov**

Helpful Links

- [Simo Ahava](#)
- [Analytics Mania](#)